REMARKS

As a preliminary matter, Applicants respectfully request entry of this after-final amendment because Applicants submit that no new issues are being raised by the proposed amendments to Claims 1 and 10. More specifically, the proposed amendment to independent Claim 1 is merely the incorporation of the subject matter of dependent Claims 3, 4 and 9 into Claim 1, with the associated cancellation of Claims 3, 4, and 9. Since the subject matter of proposed amended Claim 1 has already been considered with the examination of now-cancelled dependent Claims 3, 4 and 9, in combination with associated independent Claim 1, no new issues are raised by the these proposed amendment to Claim 1.

Similarly, the proposed amendment to independent Claim 10 is merely the addition of the subject matter of now-cancelled dependent Claims 4 and 9 into this claim. Although Claims 4 and 9 originally referred to independent Claim 1, and not to Claim 10, the main difference between Claims 1 and 10, prior to this proposed amendment, was that Claim 1 recited only a spin valve sensor, while Claim 10 recited a magnetic storage apparatus including such a spin valve sensor. Accordingly, the subject matter of proposed amended Claim 10 should have been considered when examining previous Claims 1, 4, 9 and 10. Thus, since no new issues are believed to be raised by the proposed amendments to Claims 1 and 10, Applicants respectfully request entry of this after-final amendment.

As an additional preliminary matter, with regard to the Information Disclosure Statement filed February 11, 2004, Applicants have discovered an error in the listing of the name of the inventor for United States Patent No. 6,181,534. The correct surname of the

inventor is "Gill" (and not "Singh," as incorrectly listed on the Form PTO-1449 submitted with the IDS). Applicants respectfully request that the Examiner make the appropriate correction to the Form PTO-1449.

With regard to paragraph 3 of the December 27, 2004 Final Office Action, Applicants agree that the Examiner is entitled to give the claim terms the broadest reasonable interpretation consistent with Applicants' specification. However, Applicants would like to point out that the materials listed on page 6, lines 14-18, of Applicants' specification are only examples of suitable materials, and that other materials may also meet the claim language of "a metal which improves GMR performance."

With regard to paragraph 5, although Applicants have cancelled Claim 3 and incorporated its subject matter into Claim 1 in order to expedite prosecution, Applicants respectfully traverse the objection of Claim 3 under 35 U.S.C. §1.75(c). Applicants respectfully submit that Claim 3 does further limit the subject matter of independent Claim 1 because the materials listed in Claim 3 are not listed in Claim 1. As mentioned above, the materials listed on page 6, lines 14-18, of Applicants' specification are only examples of suitable materials, and other materials may also meet the claim language of "a metal which improves GMR performance." Further, it is well established that it is improper to read limitations from the specification into the claims. *See, e.g., In re Priest*, 199 USPQ 10, 15 (C.C.P.A. 1978). Therefore, since the materials of Claim 3 are not listed in Claim 1, and incorporating them into Claim 1 would involve improperly reading limitations from the specification into the claims, Claim 3 does further define the invention of Claim 1.

In paragraph 7 of the Final Office Action, the Examiner responded to the above-arguments by stating that Applicants are not enabled for materials for the metal layer other than those listed in (now-cancelled) dependent Claim 3 because these are the only materials listed in the specification. The Examiner supported his assertion by citing *Ex parte Slob*, 157 USPQ 172 (Pat. Off. Bd. App. 1967), which is a case decided by the Patent Office Board of Appeals in 1967. In *Ex parte Slob*, the Board affirmed a §112 rejection that certain claims for a process for preparing a detergent tablet were indefinite and too broad primarily because, in the Board's opinion, the claims were vague, indefinite and functional, and also because the claims covered materials that could not accomplish the intended purposes. 157 USPQ 172-73.

In contrast to the instant case, the rejection in *Ex parte Slob* was a §112 rejection that the claims were indefinite and too broad. *Id.* Further, the entire claim in the Slob application was directed to a process of making a detergent tablet that had certain properties (such as a certain liquefication temperature and disintegration time) without making any mention of the class of materials used. In contrast, in the present case, the claim includes the class of materials and/or other details of the materials of each of the different layers (such as a "magnetic" layer, a "metal oxide" layer, a "metal" layer and a layer made of AuCu, AgCu, AuAgCu or an alloy thereof). Thus, the present claim does not appear to suffer from the same problems associated with the claim in *Ex parte Slob*.

Further, more recent case law on enablement (which is the issue at hand, as opposed to §112 indefiniteness) from the Court of Customs and Patent Appeals states that an

applicant is "*not* required to disclose *every* species encompassed by their claims even in an unpredictable art" (emphasis in original). *In re Angstadt and Griffin*, 190 USPQ 214, 218 (C.C.P.A. 1976). Similarly, the Court of Customs and Patent Appeals has also stated that "[t]o provide effective incentives [to seek patent protection], claims must adequately protect inventors. To demand that the first to disclose shall limit his claims to what he has found will work or to materials which met the guidelines specified for "preferred" materials . . . would not serve the constitutional purpose of promoting progress in the useful arts." *In re Johnson and Farnham*, 194 USPQ 187, 195 (C.C.P.A. 1977). In *In re Johnson and Farnham*, the Court refused limit the claims to a polymer with electron withdrawing groups having a sigma* value of 0.7 or greater even though two of the preferred embodiments included language reciting that "the practical limit of operation of the polymerization reaction is reached when the electron withdrawing group has a sigma* value of 0.7" and that the cumulative sigma* influence should be "at less about 0.7." *Id.* Likewise, in the instant application, Applicants' Claim 10 should not be limited to the specific metals recited in the specification.

Moreover, the materials listed on page 6, lines 14-18, of Applicants' specification (and previously defined in Claim 3) are only examples of suitable materials, and other materials may also meet the claim language of "a metal which improves GMR performance." Further, it is well established that it is improper to read limitations from the specification into the claims. *See, e.g., In re Priest*, 199 USPQ 10, 15 (C.C.P.A. 1978). Therefore, since the materials of Claim 3 are not listed in Claim 10, incorporating them into

Claim 10 would involve improperly reading limitations from the specification into the claims.

With regard to paragraph 4 of the Final Office Action, the phrase at issue ("wherein the magnetic layer has an effective magnetic layer thickness, excluding a thickness of a magnetically dead layer, greater than 0 and less than approximately 40 Å") is disclosed in the specification, as originally filed, on page 8, lines 25-31. Applicants respectfully submit that one of ordinary skill in the art would readily understand that the following phrase: "wherein the magnetic layer has an effective magnetic layer thickness, excluding a thickness of a magnetically dead layer, greater than 0 and less than approximately 40 Å" refers to a magnetic layer including one or more sub-layers, and in cases where there are multiple sub-layers, only those layers with non-trivial magnetic properties are counted towards the "effective" thickness, and not those layers with only trivial magnetic properties (i.e., "magnetically dead layers"). Support for the multilayer structure embodiment can be found in the specification on, *inter alia*, page 5, lines 30-33 ("The first magnetic layer 4 is made of a magnetic material such as a Co-based alloy, and may have a single layer structure or a multi-layer structure."). Accordingly, Applicants respectfully submit that the Examiner's interpretation in which the word "effective" as well as the following language "excluding a thickness of a magnetically dead layer" is ignored is incorrect.

With regard to paragraph 5 of the Final Office Action, Applicants respectfully submit that the objection of Claim 3 under 35 U.S.C. §1.75(c) has been rendered moot

because this claim has been cancelled, and the subject matter therein incorporated into independent Claim 1.

Claim 1-13 stand rejected under 35 U.S.C. § 103 as being unpatentable over United States Patent No. 6,181,534 to Gill. Applicants have canceled Claims 3, 4 and 9, without prejudice, thereby rendering this rejection moot with respect to these claims. However, with respect to Claims 1, 2, 5-8 and 10-13, Applicants respectfully traverse this rejection.

Applicants respectfully submit that Gill fails to disclose or suggest all of the claimed features of the present invention. More specifically, Gill fails to disclose or suggest a magnetoresistive spin-valve sensor that includes, *inter alia*, a back layer made of AuCu, AgCu, AuAgCu or an alloy thereof, as recited in independent Claims 1 and 10. Instead, Gill discloses a first specular reflector layer 318 (which the Examiner has equated with the claimed "back layer") made of Cu, Au, or Ag. Additionally, Gill fails to disclose or suggest a magnetoresistive spin-valve sensor that includes, *inter alia*, a magnetic layer "forming a free layer and having an effective magnetic layer thickness, excluding a thickness of a magnetically dead layer, greater than 0 and less than approximately 40 Å," as defined in independent Claims 1 and 10.

First, with regard to a back layer made of AuCu, AgCu, AuAgCu or an alloy thereof, as recited in independent Claims 1 and 10, the Examiner has correctly acknowledged that Gill only discloses a first specular reflector layer 318 (which the Examiner has equated with the claimed "back layer") that is made of Cu, Au, or Ag, and not of the claimed

materials (AuCu, AgCu, AuAgCu). To remedy this deficiency, the Examiner stated that one of ordinary skill in the art would have envisioned the use of the claimed materials (page 4, lines 11-15) and that one of ordinary skill in the art would appreciate that the claimed materials would be capable of meeting the disclosed use of the Gill invention (page 6, lines 16-20). However, the Examiner's response lacks the required showing of a motivation as to why one of ordinary skill in the art would have substituted any of the claimed materials (AuCu, AgCu, AuAgCu) for the materials disclosed in Gill (Cu, Au, or Ag).

It is well established that a § 103 rejection requires that there be a motivation to modify the cited reference to arrive at the claimed invention. *See e.g., Ex parte Levengood*, 28 USPQ2d 1300, 1302 (Bd. Pat. App. Int. 1993) ("an examiner cannot establish obviousness . . . without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done."). The Examiner's statements that one of ordinary skill in the art would have envisioned the use of the claimed materials and that one of ordinary skill in the art would appreciate that the claimed materials would be capable of meeting the disclosed use of the Gill invention are very similar to statements that the reference is capable of being modified in a certain way. The Federal Circuit has found that these types of statements, without more, do not supply the required motivation to modify a reference necessary to support a § 103 rejection. *See In re Mills*, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990) ("while [the prior art] apparatus may be capable of being modified to run the way [the claimed] apparatus [runs], there must be some suggestion or motivation in the reference to do so."). The Board of Patent Appeals and Interferences also struck down a

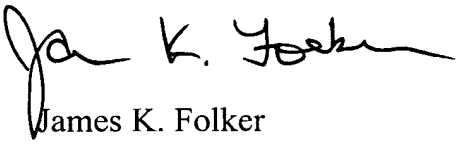
rejection based on similar reasoning in *Ex parte Levengood* by stating "That which is within the capabilities of one skilled in the art is not synonymous with obviousness." 28 USPQ2d at 1302. Accordingly, because the Examiner has failed to provide the required motivation for substituting the claimed materials (AuCu, AgCu, AuAgCu) for the materials disclosed in Gill (Cu, Au, or Ag), Applicants respectfully request the withdrawal of this §103 rejection of Claims 1, 2, 5-8 and 10-13 for at least this reason.

Second, Applicants respectfully submit that the Gill reference fails to disclose or suggest a magnetoresistive spin valve sensor that includes, *inter alia*, a magnetic layer "forming a free layer and having an effective magnetic layer thickness, excluding a thickness of a magnetically dead layer, greater than 0 and less than approximately 40 Å," as defined in independent Claims 1 and 10. On page 4, lines 18-22, of the Final Office Action, the Examiner asserted that layer 312 [of Figure 9 of Gill] could be considered as the claimed magnetic layer with the above-mentioned features (some of which were originally found in now-cancelled Claim 4). However, layer 312 of Gill is not a "free layer," as this term is known in the art. Instead, layer 312 of Gill is a pinned layer, as shown on Figure 9 of Gill. Further, there is no suggestion to modify layer 312 of Gill to be a free layer, or to modify layer 316 of Gill to be of an effective magnetic thickness greater than 0 and less than approximately 40 Å, as defined in amended independent Claims 1 and 10. Accordingly, for this reason also, Applicants respectfully request the withdrawal of this §103 rejection of independent Claims 1 and 10 and associated dependent Claims 2, 5-8 and 13.

For all of the above reasons, Applicants request reconsideration and allowance of the claimed invention. Should the Examiner be of the opinion that a telephone conference would aid in the prosecution of the application, or that outstanding issues exist, the Examiner is invited to contact the undersigned.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By 

James K. Folker
Registration No. 37,538

April 15, 2005

Suite 2500
300 South Wacker Drive
Chicago, Illinois 60606
(312) 360-0080

Customer No. 24978
P:\DOCS\0941\68363\802814.DOC